

*U.S. Application No. 09/981,433  
Reply to Official Action dated April 2, 2004*

**Amendments in the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

17. (Currently Amended) A transmitter for sending an encrypted signal to control an actuator, comprising:

oscillator for generating a radio frequency oscillatory signal;

apparatus for enabling the sending of an encrypted signal;

binary code generator responsive to the enabling apparatus for generating a variable binary code, said variable code being different for each enabling by the enabling device;

multi-value digit code generator for generating a multi-value digit code responsive to the variable binary code, wherein each multi-value digit has four or more at least three possible values; and

transmitting apparatus for modulating the radio frequency oscillatory signal with the multi-value digit code to produce a modulated multi-value digit coded variable radio frequency signal for operation or control of a secure actuator.

18. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 17, further comprising apparatus for receiving said variable binary signal and producing a mirrored binary signal, said mirrored binary signal being supplied to said multi-value digit code generator for generating the multi-value digit signal from the variable binary signal.

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19. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 17, comprising apparatus for producing a fixed code signal and for combining said fixed code signal with a rolling code signal.

20. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 19, comprising apparatus for interleaving multi-value digits derived from said fixed code signal with multi-value digits derived from said rolling code signal to produce a multi-value digit interleaved fixed and rolling code signal.

21. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 17, comprising incrementing apparatus for altering said variable code by adding a fixed value with each enabling apparatus actuation.

22. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 21, wherein said means for incrementing said variable code increments said variable code by a prime number value.

23. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 17, wherein said binary code generator for generating a variable binary code includes a non-volatile memory for storing a variable binary code.

24. (original) A transmitter for sending an encrypted signal to control an actuator according to claim 17, wherein said binary code generator for generating said variable code includes storage means holding a previous cycle variable code signal from which the variable code is generated.

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25. (Currently amended) A remote security system for communicating an encrypted signal to a control actuator, comprising:

binary code generator for generating a sequence of variable binary codes according to a predetermined algorithm, successive codes in the sequence being different from preceding codes in the sequence;

multi-value digit code generator for converting said generated variable binary code to a multi-value digit code, wherein each multi-value digit has ~~at least three~~ four or more possible values;

a transmitter for modulating a transmitted radio frequency signal with said multi-value digit code;

a radio-frequency receiver for demodulating said transmitted modulated radio frequency signal and providing a received multi-value digit code;

multi-value digit code convertor for converting said received multi-value digit code to a received binary code;

a controller responsive to a positive comparison of said received binary code and a reference variable binary code; and

update apparatus responsive to said positive comparison for updating said reference variable binary code according to said received binary code.

26. (original) A remote security system according to claim 25, wherein said update apparatus updates said reference variable binary code by performing said predetermined algorithm on said reference variable binary code.

27. (original) A remote security system according to claim 25, wherein said positive comparison results if said received binary code and said reference variable binary code lie within a predetermined numerical limit of one another.

28. (original) A remote security system according to claim 27, wherein said positive comparison results if the numerical difference of said received binary code

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minus said reference

variable binary code is a positive number less than said predetermined limit.

29. (original) A remote security system according to claim 28, wherein said predetermined limit is about 1000.

30. (original) A remote security system according to claim 28, wherein said positive comparison results if at least two said received binary codes transmitted in succession, each of which is numerically different from said reference variable binary code by a number outside the range of said predetermined limit, represent successive results of said predetermined algorithm.

31. (original) A remote security system according to claim 30, wherein said positive comparison results if said successively transmitted codes which represent successive results of said preselected algorithm, each yield a difference when subtracted from said reference variable binary code outside the range of zero to a second predetermined limit.

32. (original) A remote security system according to claim 31, wherein said second predetermined limit is about 300.

33. (original) A remote security system according to claim 27, wherein the variable binary code is a rolling code and the system further comprises a binary code combiner for combining a binary fixed code with said binary rolling code and providing the combination to said multi-value digit code generator.

34. (original) A remote security system according to claim 33, further comprising apparatus for interleaving multi-value digits derived from said binary

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fixed code with multi-value digits derived from said binary rolling code to provide an interleaved multi-value digit fixed-and-rolling code to said transmitter.

35. (original) A remote security system according to claim 34, further comprising apparatus for receiving said output of said radio-frequency receiver and separating said interleaved fixed-and-rolling code and providing to said multi-value digit code convertor a received multi-value digit fixed code and a received multi-value digit rolling code.

36. (original) A remote security system according to claim 35, wherein said multi-value digit code convertor provides a received binary fixed code in response to said received multi-value digit fixed code and a received binary rolling code in response to said received multi-value digit rolling code, and further comprising addressing apparatus for using said received binary fixed code to address said reference variable binary code in a memory.

37. (original) A remote security system according to claim 36, further comprising means for mirroring said binary rolling code and providing it to said multi-value digit code generator.

38. (original) A remote security system according to claim 37, further comprising apparatus for mirroring said received binary rolling code and providing it to said controller and to said update apparatus.

39. (original) A remote security system according to claim 38, wherein said predetermined algorithm generates a variable binary code by adding a numeric constant to it.

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40. (original) A remote security system according to claim 39, wherein said predetermined algorithm generates a variable binary code by adding the value 3 to it.

41. (original) A remote security system according to claim 31, further comprising second update apparatus for updating said reference variable binary code according to one of the set of said successively transmitted received binary codes.